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Enhancing health-related physical fitness in rural black overweight and obese women with manifest risk factors for multimorbidity through community-based mind-body (tae-bo) physical activity intervention**Musa L Mathunjwa***University of Zululand, South Africa*

Non-communicable diseases (NCDs) stand as the foremost cause of global mortality, exerting a particularly pronounced impact on low- and middle-income nations and rural populations. In response, this study endeavors to ascertain the potential of a community-based mind-body physical activity (PA) program, introduced within a resource-limited context, to enhance health-related physical fitness outcomes. Focused on black adult women with overweight or obesity (25 ± 4.7 years) and a body mass index (BMI) exceeding 25 kg.m^{-2} , drawn from a rural South African settlement with discernible risk factors for multimorbidity, participants were allocated either to a 10-week waiting-to-treat non-exercising control group ($n = 65$) or to a community-based mind-body program ($n = 60$) involving thrice-weekly, 45–60 minute sessions of Tae-Bo. The intervention yielded statistically significant enhancements ($p \leq 0.05$) in body weight ($p = 0.043$), BMI ($p = 0.037$), as well as waist ($p = 0.031$) and hip circumferences ($p = 0.040$). Notable improvements were also evident in flexibility at both mid- and post-program assessments ($p = 0.033$ and $p = 0.025$, respectively), alongside augmented static balance (mid: $p = 0.022$; post: $p = 0.019$), hand grip strength (mid: $p = 0.034$; post: $p = 0.029$), sit-up performance (mid: $p = 0.021$; post: $p = 0.018$), and cardiorespiratory endurance (mid: $p = 0.017$; post: $p = 0.011$). Conversely, no significant change in the sum of skinfolds emerged following program completion ($p = 0.057$). The findings underscore the potential of a community-based mind-body program to ameliorate health-related physical fitness, thus providing a means to mitigate health disparities and foster positive improvements in resource-limited communities, regardless of the impediments to engagement.

Biography

Dr. Musa Lewis Mathunjwa is an esteemed senior lecturer in the Human Movement Science Department at the University of Zululand (UniZulu). As a dedicated scholar, Dr. Mathunjwa has assumed the role of Project Investigator for the pioneering PALLAR Project. He also mentors a cohort of aspiring scholars, overseeing the academic journeys of three PhD candidates and six master's students.